# RECYCLING 101

**PREPARATION TIME:** **MODERATE**

## Learning Objectives

Students will:

- understand the basic concepts of recycling; and
- understand the environmental and economic benefits of recycling

## Background

**Recycling** is one of the nation's best environmental success stories.

But just what is recycling? Recycling is a three-step process. The first step is collection – that's when the **recyclables** are placed in the bin or taken to the recycling drop-off center. The second step is manufacturing – that's when recyclables are processed into **raw material** that are manufactured into new products. The third step is buying recycled. That's what completes the **recycling loop**.

Why recycle? Recycling is good for the environment, human health and the economy. The recyclables you place in your curbside bin or take to a recycling drop-off center have value. By turning waste into materials and products that can be bought and sold, recycling creates jobs and adds significantly to the nation's economy. Recycling promotes the sustainable use of natural resources. Recycling saves energy. Recycling reduces pollution. Recycling lessens the need to build landfills and incinerators.

Local governments design and run programs that need participation to be successful. People can recycle at home, work or school – just about anywhere.

There are some materials that have to be recycled by law in South Carolina – car (lead-acid) batteries, large appliances, tires and motor oil. Yard trimmings cannot be disposed of in a municipal solid waste (MSW) landfill and should be recycled, but frequently are disposed of in another type of landfill.

Local governments collect recyclables as part of their waste management services. Many communities offer curbside collection programs – that is residents have recycling bins that can be placed on the curb to be picked up by a recycling

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## Learning Essentials

**Focus:** Recycling

**Subject:** Science

**Extension:** Social Studies

**Materials:** A collection of plastic samples, Student Worksheets (included)

**Teaching Time:** One class period

**Vocabulary:** E-waste, glassphalt, raw material, recyclables, recycling, recycling loop

**Lesson Resources:** "Recycling 101," "Residential Recycling: Back to the Basics"

truck (usually once a week). Other communities rely on drop-off centers where residents can take their recyclables. Communities also may have privately owned buy-back centers (e.g., a business that buys aluminum cans from residents). Some communities offer a combination of all of these services.

Most recycling programs accept traditional recyclables such as aluminum cans, plastic bottles (soft drink, water, detergent, shampoo, milk etc.,) newspapers (including inserts) cardboard, steel cans (soup, fruit, vegetable and other food) and glass bottles (clear, glass and brown). Many other programs also accept cardboard, magazines, office paper and unwanted mail.

Just what happens to the recyclables? Plastic bottles can become part of new plastic bottles, lumber, carpeting and clothing. Aluminum cans can become new cans and be back on the supermarket shelf within six weeks. Glass can be recycled forever into new glass containers as well as **glassphalt** (the asphalt that shimmers in the sunlight), road filler and fiberglass. All steel products contain recycled steel.

## Challenges of Recycling

Despite many successes, recycling has not reached its full potential. The most frequent complaint of local governments is that it costs more to collect recyclables than to simply throw away the material. Clearly, while there is always a cost with any waste management option, recycling programs must operate as efficiently as possible.

Under participation hurts many recycling programs throughout the country. More material collected consistently and without contaminants brings better market prices.

While many products can be recycled, there are many others that can't be recycled easily. Electronics waste – also known as **e-waste**, is one of the fastest growing waste streams in the nation. Programs across the country are working on how to efficiently and properly manage e-waste.

And finally, recycling facilities such as materials recovery facilities are not always welcome in communities. Residents are concerned about the noise, increased traffic and pollution.

## Learning Procedure

1. Discuss the recycling program in your community or school. What is collected? What isn't? How is it collected (curbside or drop-off center)? Where do the recyclables go after they are collected? Ask the county recycling coordinator to present to the class.

2. Have students research on what types of products are made from their recyclables.

## Questions for the Class

1. What does recycle mean? (Recycle means minimizing waste by recovering and reprocessing usable products that might otherwise become waste i.e., recycling of aluminum cans, paper and plastic or glass bottles.)

2. What are some environmental benefits of recycling? (Recycling conserves natural resources, saves energy and reduces pollution associated with the mining and extraction of raw materials.)

3. What are some economic benefits of recycling? (Recyclables have value and recycling creates jobs and is good for the economy.)

4. Where can residents and students learn more about the recycling program in their community? (Visit **www.scdhec.gov/recycle** and click on county programs or call **1-800-768-7348**.)

## Extension Activity

Have students find out what educational efforts or materials are available to inform residents on what to recycle, where and who to call for more information. Have the students design materials (e.g., posters and brochures) to help get out the word on recycling.